

[TITLE]

COMPUTER SYSTEMS PC-CPU MOTHERBOARDS WITH COMMON FAULT-
TOLERANT POWER SUPPLY

RECEIVED

JAN 26 2004

Technology Center 2100

[PAGE 1, SECOND AND THIRD PARAGRAPHS]

Background of the Invention

X/ It is known to form a computing system of the above-specified kind by interconnecting the processing units of a multiplicity of personal computers (PCs) and operating them in parallel with one another; such systems are sometimes referred to as 'Beowulf clusters'. The central processing units (CPUs) of ~~[[Pcs]]~~ PCs provide significant computing power at relatively-low cost, and advantage has been taken of this to form systems of the above-specified kind having very high computing power comparable with that of a specially-designated supercomputer, at a fraction of the supercomputer-cost. In such systems a multiplicity of PC-CPU's are interconnected and operated in parallel with one another as separate nodes of a local area network. These systems using clustered CPUs require the development of special software to enable parallel operation, and are generally slower than their supercomputer counterparts, but have significant advantage economically.

The CPUs of ~~[[Pcs]]~~ PCs are not designed to have the extended reliability to be expected of a supercomputer, so computing systems of the known form involving clustered CPUs are, in comparison, susceptible to faults. A fault occurring in an individual CPU will disrupt processing of the current application, and although the application can in general be re-started without replacement of the faulty unit, the disruption and loss of computing time involved is undesirable.

[PAGE 2, THIRD PARAGRAPH]

22 The computer system of the present invention may, especially for cost-advantage, ~~[[utilise]]~~ utilize processors that are of a form such as used in the context of PC computers. However, in accordance with the present invention, rather than powering each processor from its own power-supply unit as in the case of the known form of computer system referred to above utilising PC-CPU's, they are powered from common power-supply means. The power-supply units of PC-CPU's especially, are not designed to have long fault-free operation so the likelihood of a fault arising in any of a multiplicity of clustered PC-CPU's, can be significantly high. The individual power-supply units might be replaced by units with a higher standard of reliability, but it is generally more economical to provide a common power-supply means and invest this with an even higher standard of reliability and, moreover, to include fault-tolerant redundancy within it.